

**MACOM**<sup>TM</sup>

*Partners in RF & Microwave*

# SPICE Model

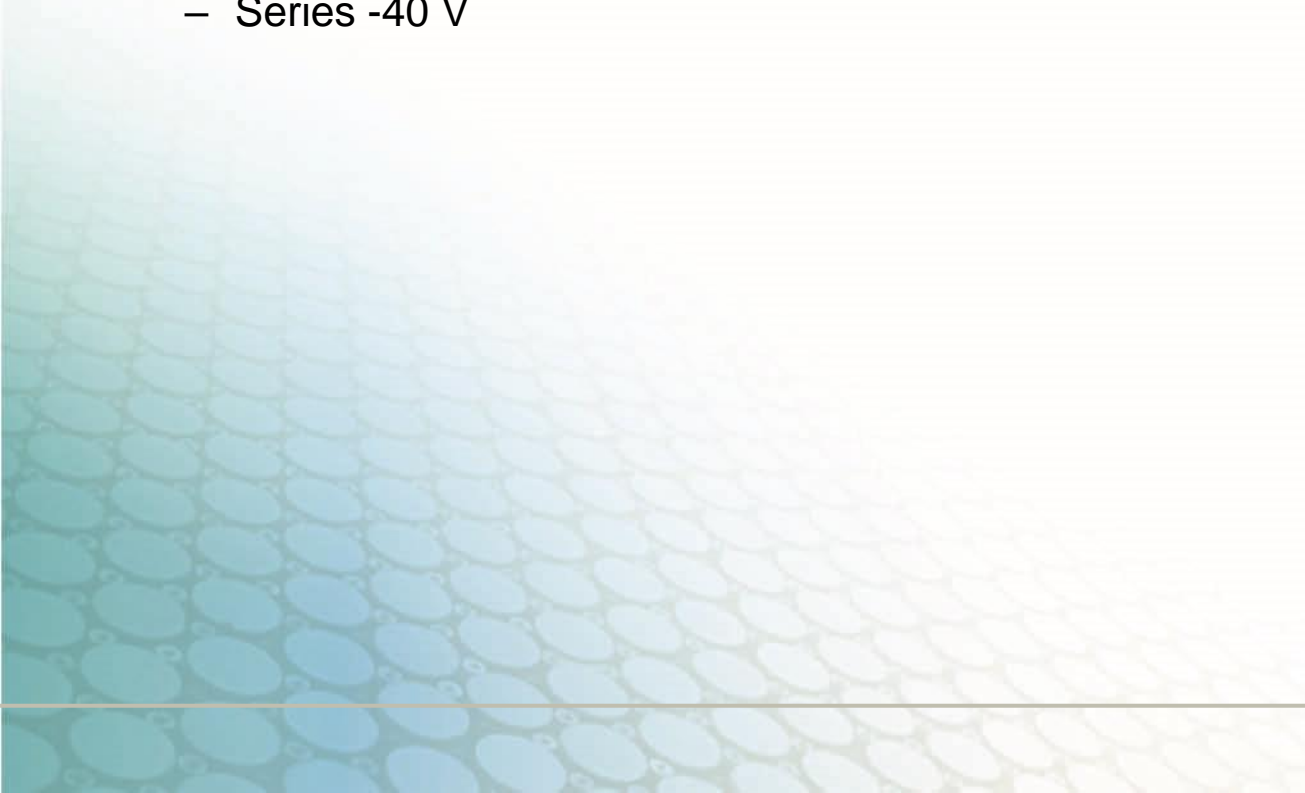


**MADP-011034-10720T**

Nov 29, 2023

# Contents

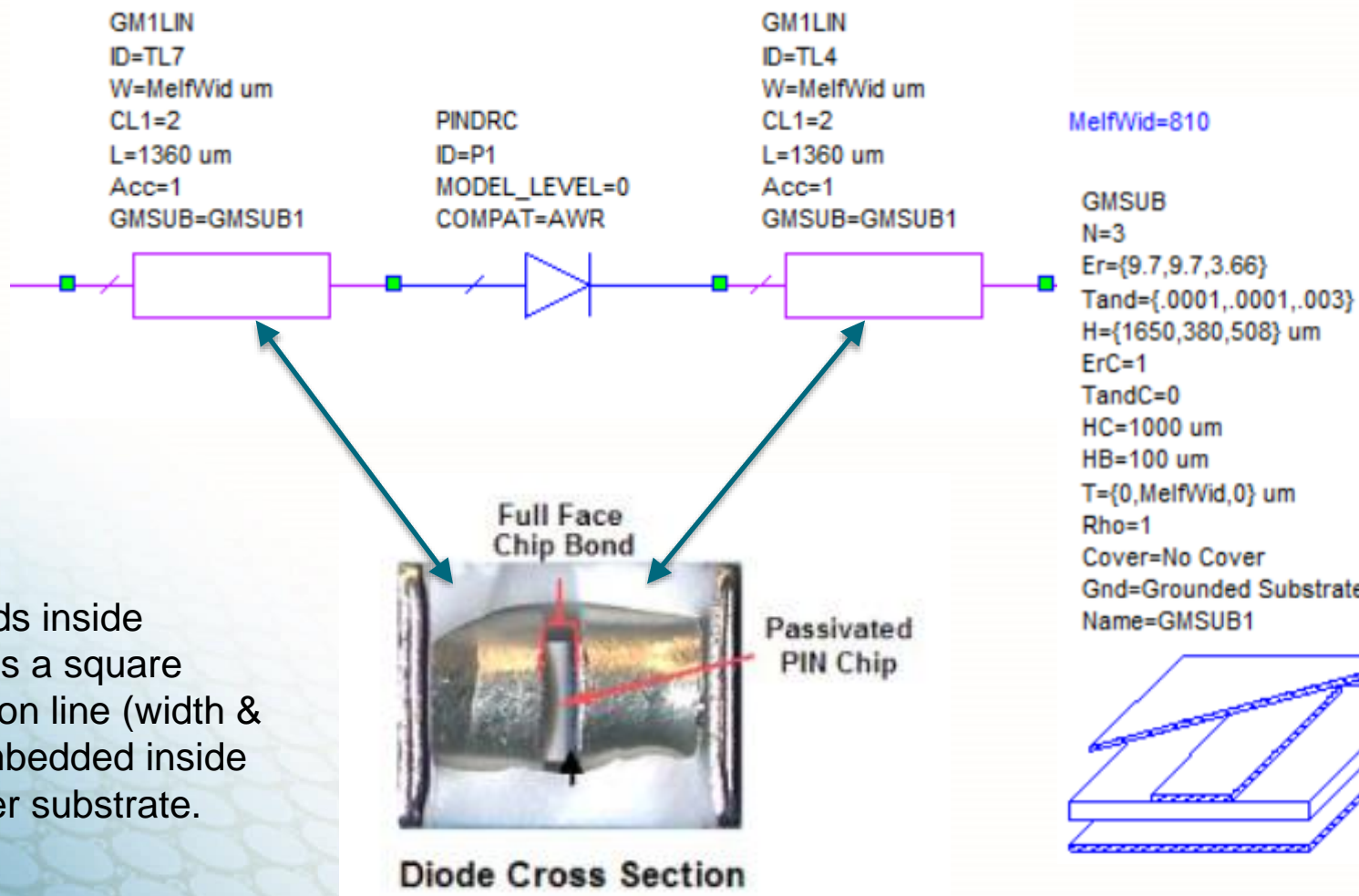
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- **Test Fixture**
  - **Package**
  - **Diode**
  - **Results**
    - IV Curve
    - Series 100 mA
    - Series -40 V
- 

# Coaxial Test Fixture

- **Keysight E4991B-300 Impedance Analyzer with E4991B-300 Test Head**
- **Keysight 16197A Bottom Electrode Test Fixture used (1MHz to 3 GHz operation)**
  - S-Parameters pulled from Keysight E4991B-300, calibration as follows
  - OPEN, SHORT, and LOAD
  - Fixture Compensation OPEN and SHORT for 16197A Bottom Electrode Fixture
  - the test fixture allows the reference plane to be placed right at the leadless face of the MELF, so no de-embedding of transmission line needed

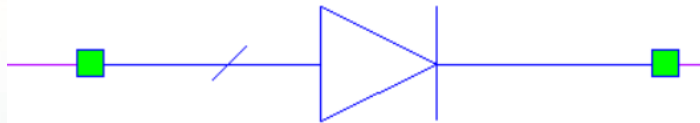
# Package



Model leads inside package as a square transmission line (width & height) embedded inside a multilayer substrate.

# Robert Caverly PIN Diode Model

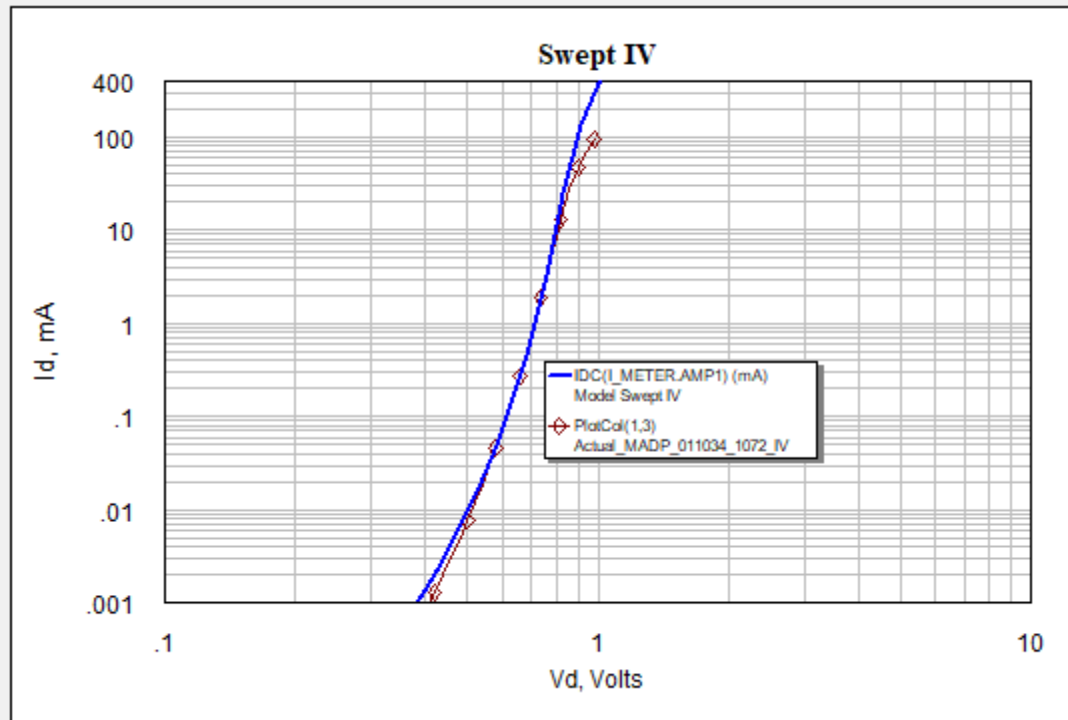
PINDRC  
ID=P1  
MODEL\_LEVEL=0  
COMPAT=AWR



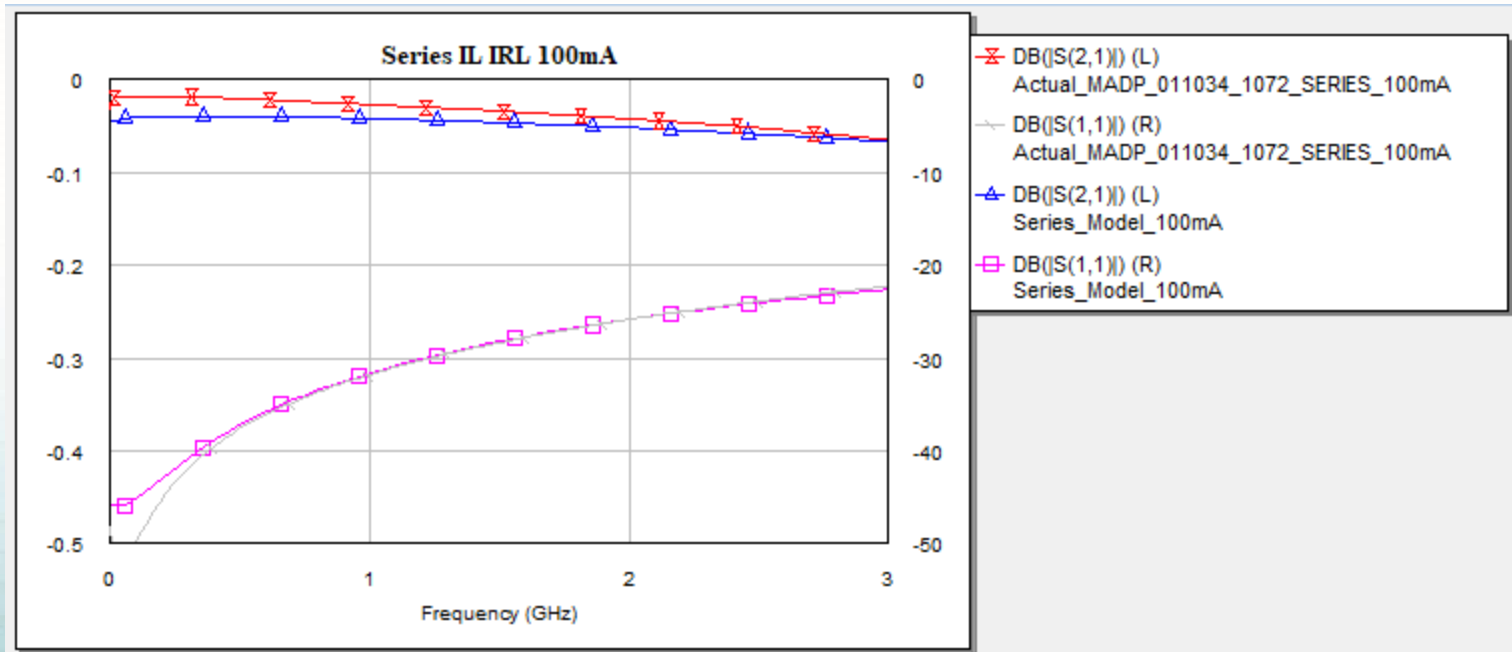
| Name        | Value     | Unit |
|-------------|-----------|------|
| ID          | P1        |      |
| IS          | Is        | mA   |
| IKNEE       | Iknee     | mA   |
| N           | Npin      |      |
| RLIM        | Rlim      | Ohm  |
| REPI        | Repi      | Ohm  |
| CJ          | Cj        | pF   |
| CPKG        | Cpkg      | pF   |
| TAU         | LT        | ns   |
| W           | W         |      |
| B           | 3         |      |
| LBOND       | Lpkg      | nH   |
| TNOM        | 26.85     | DegC |
| TEMP        | 26.85     | DegC |
| AREA        | 1         |      |
| NFLAG       | Noise Off |      |
| MODEL_LEVEL | 0         |      |
| COMPAT      | AWR       |      |

Is=6.4e-07  
Iknee=1  
Npin=1  
Repi=5000  
LT=300  
W=11  
Cj=0.6  
Rlim=0.19  
Cpkg=0.3  
Lpkg=0.16

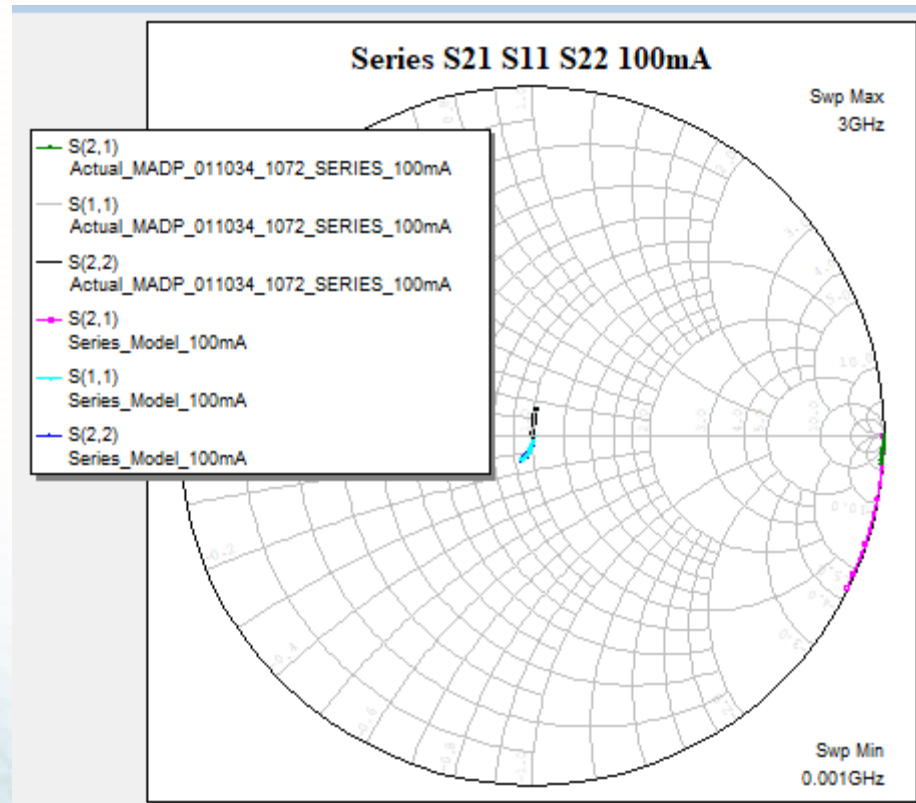
# IV Curve



# Series 100 mA

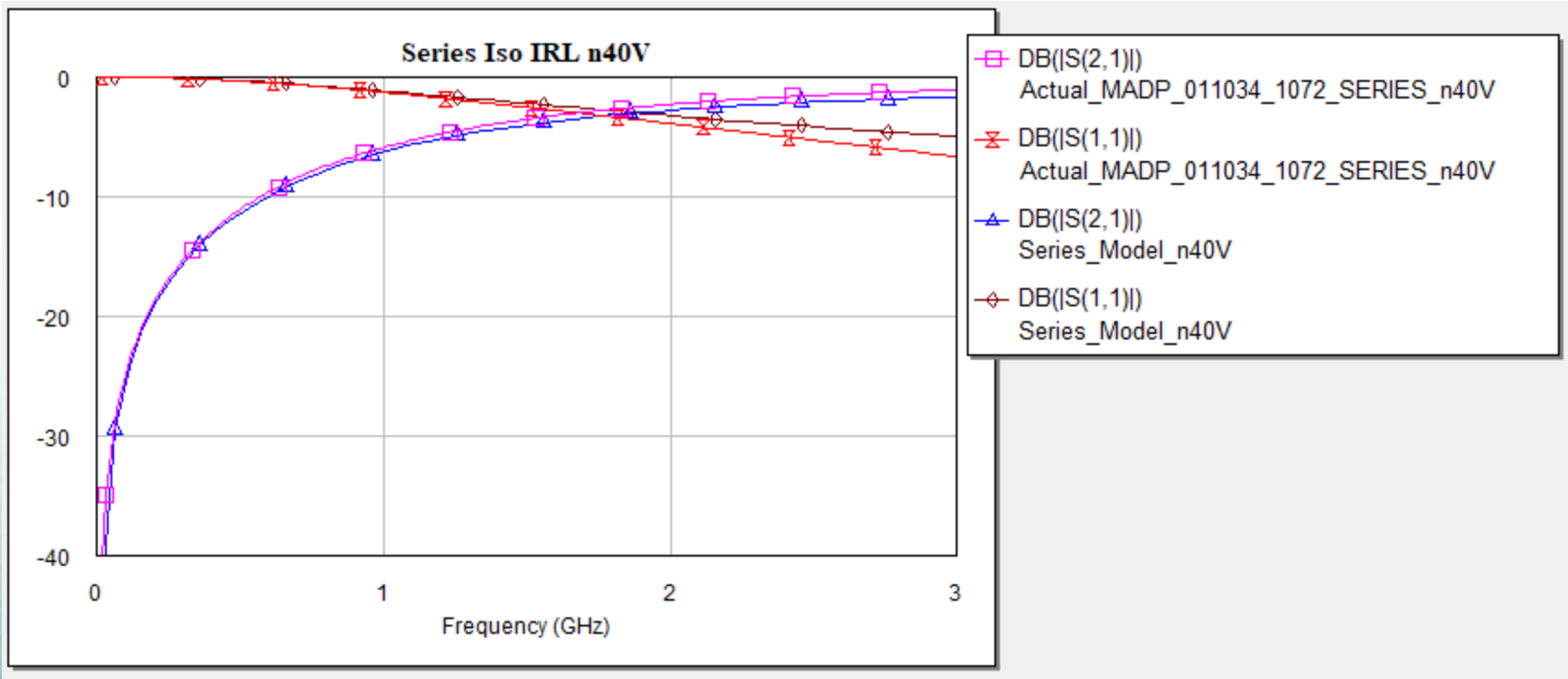


# Series 100 mA





# Series -40 V



# Series -40 V

